

ABSTRACT

A medical apparatus and method useful for the efficacious thermal treatment of lumen such as varicose veins during laser surgery is provided. An energy delivery device comprising a diffusing optical fiber with a light-emitting section and a memory device having data programmed therein is also provided. The optical fiber includes a temperature sensor for measuring a temperature at a treatment site. An energy generator is connected to the optical fiber and to a positioning device. The optical fiber engages positioning device so that the positioning device can moveably position the light-emitting section of the optical fiber. Consequently, the optical fiber can be inserted directly into an appropriate position within a varicose portion of a vein or other lumen for thermal treatment of the vein. The memory device and a main processor are used to automatically control the operation of the medical apparatus including the intensity of energy emitted and the movement or position of the light-emitting section of the optical fiber within the vein being treated.

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